

## CLAIMS

We claim at least the following:

- 1     1.     A method for performing polymer analysis, comprising:  
2                 providing a sample and a polymer array, the polymer array having a  
3                 plurality of spots;  
4                 providing a set of conditions that are selected to generate a response  
5                 from selected spots;  
6                 applying the set of conditions to the sample; and  
7                 generating data corresponding to the response from the selected spots.
- 1     2.     The method of claim 1, further comprising:  
2                 modifying the set of conditions applied to the sample until the data  
3                 satisfy a criteria.
- 1     3.     The method of claim 1, wherein providing a set of conditions comprises:  
2                 providing a set of hybridization conditions.
- 1     4.     The method of claim 3, wherein providing a set of hybridization conditions  
2                 comprises:  
3                 adjusting the hybridization conditions applied to the sample  
4                 dynamically until hybridization data satisfies a hybridization criteria  
5                 corresponding to the selected spots.

1     5.     The method of claim 3, wherein the hybridization conditions are selected  
2           from: temperature of the polymer array, pH of the polymer array, a time period  
3           of the polymer array, and stringency of the polymer array, and combinations  
4           thereof.

1     6.     The method of claim 1, wherein providing a set of conditions comprises:  
2           providing a set of washing conditions.

1     7.     The method of claim 6, wherein providing a set of washing conditions  
2           comprises:  
3           adjusting the washing conditions applied to the sample dynamically  
4           until a washing data satisfy washing criteria corresponding to the selected  
5           spots.

1     8.     The method of claim 6, wherein the washing conditions are selected from:  
2           temperature of the nucleic acid array, pH of the nucleic acid array, a time  
3           period of the nucleic acid array, and stringency of the nucleic acid array.

1     9.     A method for performing a polymer array analysis, comprising:  
2                 providing a sample and a polymer array, the polymer array having a  
3                 plurality of spots;  
4                 providing a set of hybridization conditions and a set of wash conditions  
5                 that are selected to generate a response for selected spots;  
6                 applying the hybridization conditions to the sample;  
7                 generating hybridization data corresponding to a first response from the  
8                 selected spots;  
9                 adjusting the hybridization conditions applied to the sample until the  
10                hybridization data satisfy hybridization criteria;  
11                applying the wash conditions to the sample;  
12                generating washing data corresponding to a second response from the  
13                selected spots;  
14                adjusting the washing conditions applied to the sample until the  
15                washing data satisfy washing criteria; and  
16                generating polymer array data.

1     10.    The method of claim 9, wherein the polymer array is selected from a  
2               polynucleotide array and a polypeptide array.

1     11.    The method of claim 9, wherein the hybridization conditions are selected  
2               from: temperature of the polymer array, pH of the polymer array, a time period  
3               of the polymer array, and stringency of the polymer array, and combinations  
4               thereof.

- 1     12.     The method of claim 9, wherein the washing conditions are selected from:  
2             temperature of the nucleic acid array, pH of the nucleic acid array, a time  
3             period of the nucleic acid array, and stringency of the nucleic acid array.

1     13.     A system for performing polymer analysis, comprising:  
2                     a polymer control system operative to:  
3                     apply a set of conditions to a sample being analyzed using a  
4                     polymer array, the polymer array having a plurality of spots, the set of  
5                     conditions are selected to generate a response from the selected spots;  
6                     analyze data corresponding to the selected spots using the  
7                     polymer control system; and  
8                     generate polymer array data.

1     14.     The system of claim 13, wherein the polymer control system is stored on a  
2                     computer-readable medium.

1     15.     The system of claim 13, wherein the polymer control system comprises:  
2                     receptive logic configured to analyze the data.

1     16.     The system of claim 13, wherein the polymer control system is further  
2                     operative to dynamically adjust the set of conditions applied to the polymer  
3                     array.

1     17.     The system of claim 13, further comprising:  
2                     means for analyzing the data.

- 1     18.     The system of claim 13, wherein the set of conditions is selected from a set of  
2               hybridization conditions and a set of wash conditions.
- 1     19.     The system of claim 13, further comprising a polymer analysis system  
2               comprising the polymer array and the polymer control system, the polymer  
3               array selected from a polynucleotide array and a polypeptide array.